

REMARKS

Claims 1-6 and 32-47 are pending. Claims 39 to 47 have been canceled.

§ 112 Rejections

Claims 1-6 and 32-47 were rejected under 35 USC § 112, first paragraph, as failing to comply with the written description requirement.

This is with respect to the term “permanent” used to characterize the electret charge in connection with the particle collection surface. In the specification at pages 9-11 the collection surfaces are described as formed of “electret” charged nonwovens, films and the like. These are films or fibers that have been charged by a variety of methods including corona treatment, hydrocharging or otherwise. The charge is trapped charges in the polymer film or fiber, which are not connected to a external power source. As such these charges are permanent (although they will dissipate in time when used) as compared to an actively charged film or other media. (Note the applied reference Haaglund which in paragraph 28 describes an electret as the “electrostatic analog of a permanent magnet”)

Double Patenting

Claims 1-6 and 32-47 were rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-23 of U.S. Patent 6,758,884.

Applicants are enclosing a suitable terminal disclaimer, rendering this rejection moot.

§ 103 Rejections

Claims 1, 2, 5 and 6 were rejected under 35 USC § 103(a) as being unpatentable over Nojima (U.S. Patent 5,925,170) in view of Hagglund et al. (U.S. Patent Publication No. 2002/0005116).

That rejection is respectfully traversed.

The primary reference Nojima shows placing deflecting electrodes within their collector cells 40. The walls of these cells are actively charged. The result is a field like they show in their Fig. 26 (not described in the specification). The field is not in front of the needle electrode but

rather drawn to the collector side walls. Claim one requires that the point ionization source be located so as to generate ions upstream of the point ionization source. This is not possible in the arrangement of Nojima. This is done by applicants by placing their point ionization 18 source upstream of the particle collection surface 22.

The combination with Haagland does not cure this deficiency. Haaglund describes an electret charged particle collection surface but uses a charging electrode 77 surrounded by a grounding electrode 78. The field generated would be similar to that of the primary reference.

Claims 32-35, 37 and 38 were rejected under 35 USC § 103(a) as being unpatentable over Nojima, taken together with Hagglund et al., and further in view of Eliasson et al. (U.S. Patent No. 4,734,105).

Likewise with respect to independent claim 32 the primary reference Nojima shows placing deflecting electrodes within their collector cells 40. The walls of these cells are actively charged. The result is a field like they show in their Fig 26(not described in the specification). The field is not in front of the needle electrode but rather drawn to the collector side walls. Claim one requires that the point ionization source be located so as to generate ions upstream of the point ionization source. This is not possible in the arrangement of Nojima. This is done by applicants by placing their point ionization 18 source upstream of the particle collection surface 22.

The combination with Haagland does not cure this deficiency. Haaglund describes an electret charged particle collection surface but uses a charging electrode 77 surrounded by a grounding electrode 78. The field generated would be similar to that of the primary reference.

Claim 32 further requires that a portion of the air flow is directed past the ionization source in a direction opposite to the downstream direction. All that the Eliasson reference discloses is recycling a portion of the partially cleaned airstream to an upstream location. The recycled air when moving upstream is outside of the apparatus and does not flow past their ionization surfaces 24 and 25 and there is certainly no disclosure of running air in an upstream direction past point ionization sources as in Nojima or Haaglund.

Claim 39 was rejected under 35 USC § 103(a) as being unpatentable over Hagglund et al. (U.S. Patent Publication No. 2002/0005116) in view of Yikai et al. (U.S. Patent No. 5,055,115).

This claim has been canceled.

Claims 40-44 were rejected under 35 USC § 103(a) as being unpatentable over Hagglund et al. (U.S. Patent Publication No. 2002/0005116), taken together with Yikai et al. (U.S. Patent No. 5,055,115), and further in view of Nojima (U.S. Patent 5,925,170).

These claims have been canceled.

Claims 3, 4, 36 and 45 were rejected under 35 USC § 103(a) as being unpatentable over the prior art as applied to claims 2, 32 or 44, and further in view of Smith et al. (U.S. Patent No. 3,768,258).

Smith does not cure the deficiencies of the primary combination.

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested.

Allowance of claims 1-6 and 32-38 at an early date is solicited.

Respectfully submitted,

June 27, 2006
Date

By: 

William J. Bond, Reg. No.: 32,400
Telephone No.: 651-736-4790

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833